

REMARKS

In the Office Action, applicants were advised that the reply filed on December 10, 2004, was held to be not fully responsive to the prior Office Action. The following is intended to be fully responsive to the prior Office Action and to supersede and replace that prior reply.

CLAIM REJECTIONS

In the Office Action of September 9, 2004, claims 1-3 and 5-7 were rejected under Section 102(b) as being anticipated by US patent 5,002,620 ("King").

The use of blocks of compressible material for aircraft arrestment has been previously disclosed. The blocks of compressible material, such as cellular concrete, must have limited strength in order to provide suitable compressive failure characteristics during an aircraft arrestment. As a result, the blocks are subject to damage when subjected to jet blast phenomena, such as sonic, pressure, vibrational, lift, projected gravel and other effects of jet blast from nearby aircraft. Applicants' invention is directed to novel solutions to this problem.

Claim 1, for example, provides for the Fig. 2 combination of

- a block of compressible material 12 (e.g., a block of cellular concrete);
- frangible material 14 (e.g., a section of cement board) positioned above block 12;
- and
- intermediate material 16 (e.g., a layer of foam) positioned between block 12 and

frangible material 14.

By this novel combination, frangible material 14 provides greater resistance to external forces such as jet blast erosive effects and intermediate material 16 mitigates transmission of such effects.

Pursuant to the MPEP, if King is to provide an adequate basis for anticipation, King:

- must expressly or inherently describe “each and every element” as set forth in the claim;
- must show the “identical invention” in “as complete detail” as claimed; and
- must disclose the elements “arranged as required by the claim” (see authorities cited in Manual of Patent Examining Procedure (MPEP) Section 2131).

In addition:

- King must describe the claimed invention “sufficiently to have placed it in the possession of a person of ordinary skill in the field of the invention.” (In re Paulsen, 31 USPQ2d 1673; Fed. Cir. 1994.)
- King cannot anticipate unless elements asserted to satisfy the claim limitations “were understood to function in the same way by one skilled in the art.” (Applied Medical Resources Corp. v. United States Surgical Corp., 47 USPQ2d 1289; Fed. Cir. 1998.)
- Applicants’ preamble recitation of a “vehicle arresting unit” must be given effect “as a structural limitation on the scope of the claim rather than a statement of

purpose.” (Corning Glass Works v. Sumitomo Electric U.S.A., 9 USPQ2d 1962; Fed. Cir. 1989.)

It will be shown that the King disclosure is inadequate to anticipate.

Claim 1

The Office Action relies upon disclosure by King of a unit combining a block of compressible material (14), a frangible material (62) and intermediate material (16). It is respectfully submitted that this combination of elements is not disclosed by King.

THE KING DISCLOSURE

(I) King Has No Comparable Combination of Elements

King discloses two different types of products, a “lightweight, fiber-reinforced, concrete block” 10 in Figs. 1-3 and “another application” in the form of “wall panels 60” in Figs. 4-6. (Col. 2, lines 41-43; col. 4, lines 50-52.)

As to the **first product**, King describes the fiber-reinforced, concrete block 10, of Figs. 1-3, as including “normal weight concrete fractions 14 on each side”, with “lightweight fractions 16” of lightweight concrete and a “suitable resin 50 disposed between the opposed lightweight fractions.” (Col. 3, lines 3-5; col. 4, lines 20-23.)

As to the **second product**, King describes the wall panel 60, of Figs. 4-6, as including lightweight concrete 16, resin 50 and a fibrous mat 62, such as a high-strength carbon fiber mat. (Col. 4, lines 50-63; col. 5, lines 35-36.)

Thus, the block configuration 10 of Figs. 1-3 includes the heavier and lighter concrete materials 14 and 16 referred to in the Office Action, but **fails to include** King’s

element 62. The wall panel configuration 60 of Figs. 4-6, on the other hand, does include the high-strength mat element 62 with lightweight concrete material 16, but **fails to include** the heavier weight concrete material 14.

Anticipation requires that King show the “identical invention” with “each and every element” of claim 1 “arranged as required by the claim.” However, King discloses two different product configurations, **neither of which** includes the three elements relied upon in the Office Action as the basis for anticipation.

(II) King Fails to Disclose the Individual Elements

In addition to not disclosing the asserted combination of elements, King fails to disclose the individual elements of claim 1.

In the Fig. 1 product of King, portion 14 is “normal weight concrete” with “a crushing strength of 2000-6000 pounds per square foot” to provide the “strength, durability” of a building product (col. 3, lines 3-4; col. 4, lines 43-45; col. 1, lines 38-44). Portion 14 of King is thus intended to provide strength and is intended to **prevent structural failure** of the product during normal usage. There is no comparable high-strength element in applicants’ claim 1. King’s portion 14 provides no anticipatory disclosure of any element intended to undergo structural failure in normal usage.

The Fig. 5 product of King includes a fibrous mat 62, such as a carbon fiber mat. (Col. 4, lines 50-63.) The dictionary defines “carbon fiber” as: “an extremely strong thin fiber made by pyrolyzing synthetic fibers, such as rayon, until charred. It is used to make high-strength composites.” This is confirmed by the King reference to “high-strength

carbon fiber” (col. 5, line 36). As described by King, the “high-strength” carbon fiber mat 62 is intended to enable provision of beams with “greater strength than steel or timber” (col. 5, lines 25-28). Clearly, mat 62 of King is **not intended to break** during normal usage; that would defeat King’s objectives. The King high-strength mat 62 is not comparable to any element in applicants’ claim 1 and provides no anticipatory disclosure.

In summary with respect to claim 1, King fails to disclose applicants’ elements, fails to disclose elements arranged as claimed and fails to disclose the identical invention. In addition: (i) King teaching on high strength building products does not place any anticipatory invention “in the possession of a person of ordinary skill” in the field of vehicle arrestment, as required by the cited *In re Paulsen* opinion; (ii) King fails to even suggest that the King high-strength elements function in the same way as applicants’ elements, as required by the cited *Applied Medical Resources* opinion; and (iii) when the preamble is given effect as required by the cited *Corning Glass* opinion it is further clear that King fails to disclose the identical invention.

King discloses wall or structural units with elements selected and combined for **strength**, not for intentional structural failure in use. King describes a much different invention, one having no apparent relationship to “a vehicle arresting unit” to which applicants’ claims are addressed. An arresting unit, if it had the strength of a building product of King, would severely damage or destroy a vehicle during arrestment. Reconsideration and allowance of claim 1 are respectfully requested.

Minor changes, consistent with the preamble and description, have been made to

claim 1 confirming compressibility and breakability during an arrestment. In the specification, compression and failure of the arresting unit and its components during vehicle arrestment are discussed at the top of page 10 and breakability of the frangible material is discussed at lines 20-22 on page 6. These changes serve to further distinguish over the King description which does not disclose elements **intended** to undergo structural failure during normal usage.

Dependent Claims 2, 3 and 5-7

Dependent claims 2, 3 and 5-7 which would become allowable with allowance of claim 1 also include additional distinguishing limitations. Claim 2, for example, specifies intermediate material in the form of a sheet of foam material. King discloses no such element. As to claim 5, King discloses nothing in the form of a fastening configuration to retain frangible material above a block of compressible material. As to claim 6, anticipation requires that the reference disclose each element. Any reliance on an external ground surface would be contrary to and beyond the scope of the King disclosure. King fails to disclose any bottom layer as claimed.

Claims 4, 8 and 9

Claims 4, 8 and 9 were rejected under Section 103(a) as being unpatentable over King, as previously applied.

These claims which would become allowable with allowance of claim 1 also include additional distinguishing limitations. Claims 8 and 9, for example, include preambles referring to a “vehicle arresting bed” and a “method of forming” such a bed.

Consistent with the above-cited *Corning Glass* opinion, it is clear that King discloses nothing about the arresting bed subject matter of claims 8 and 9. King's structural building products cannot be "understood to function in the same way" or to place any vehicle arresting bed invention "in the possession of a person of ordinary skill" in the arresting bed field.

CLAIM OBJECTIONS

Claim 1 was objected to because the type of jet blast phenomena was not specified.

The prior usage of the term "jet blast phenomena" at lines 4 and 7 of claim 1 has been changed to "jet blast erosive effects", which is supported by the specification (e.g., see paragraph beginning at line 18 on page 9). The claim is thus amended for the purpose of compliance with the non-prior-art-based objection. Reconsideration of claim 1, as amended, is requested.

Claim 6 was objected to because the type of strength was not specified.

In the paragraph beginning at line 20 on page 8 of the specification, the strength of bottom layer 20 is discussed relative to the strength of block 12, whose compressive strength is discussed at the top of page 6. Consistent with this disclosure, claim 6 has been amended in its second line to insert the word "compressive." Claim 6 has also been amended in its third line to insert a missing comma for added clarity. Reconsideration of claim 6, as amended, is requested.

METHOD CLAIMS 35-43

Method claims 35-43 have been added. These claims are consistent with the prior requirement for restriction and are presented in order to provide an appropriate scope of claim coverage of the elected subject matter.

Claim 35 is basically former claim 27, with step (d) deleted and “compressible” and “breakable during vehicle arrestment” wording added as in claim 1. Step (d) is now presented in the form of dependent claim 36. Claims 37-43 are basically former claims 28-34 re-presented as claims dependent on claim 35 (with minor reordering and changes).

In the paragraph at the top of page 3 of the requirement for restriction in the Office Action of July 1, 2004, it was indicated that the inventions of claim 1 (Invention I) and claim 27 (Invention IV) were distinct, because “Invention I can be made without providing the fastening configuration.” Consistent with that holding, former claim 27 with the fastening configuration step deleted is now presented as claim 35.

Thus, consistent with the requirement for restriction, entry and consideration of claims 35-43 are respectfully requested. The discussion above regarding the distinctly different subject matter of King and absence of anticipation by King is applicable also to claim 35 and its dependent claims. Favorable consideration of claims 35-43 is requested.

ARTICLE CLAIMS 44-50

Vehicle arresting unit claims 44-50 have been added. The state of the prior art as represented by the cited references supports the basic novelty of the Fig. 2 combination of compressible block 12, frangible material 14 and intermediate material 16, as discussed above. Use of the term “cushioning” at line 6 in claim 44 is supported by the specification (see page 7, lines 4-13).

In order to provide an appropriate scope of coverage, entry and consideration of claims 44-50 are requested. These claims address applicants’ novel combination without reference to jet blast phenomena and are considered to clearly distinguish over all known prior art. These claims are also consistent with the previous election entered in this application.

In view of the discussion above regarding the absence of relevant disclosure by King, favorable consideration of claims 44-50 is requested.

SUMMARY

Non-elected claims 10-34 are canceled.

As to claim 1, as amended, it has been shown that the disclosure of King, regarding building products strong enough to **prevent** structural failure during normal usage, teaches **different components and a different invention** and is inadequate to anticipate.

Dependent claims 2-9, are allowable with allowance of claim 1 and also include

additional distinguishing limitations as discussed.

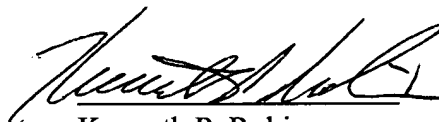
Objections to claims 1 and 6 have been addressed.

Claims 35-50, as now added, are considered allowable on the basis of the showing provided with reference to claims 1-9.

Entry of this amendment, reconsideration of all rejections and objections, and allowance of claims 1-9, as amended, and claims 35-50 are respectfully requested. This application is considered to be in condition for allowance, which action is respectfully solicited.

Respectfully submitted,

Signed: February 22, 2005



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